



STATUS REPORT

Progress and Improvements

DPW BUREAU/OFFICE: Bureau of Water and Wastewater- Back River

7/07/2022

Path Forward and Trends

On June 22, 2022, the City's Board of Estimates approved a Consent Order and Revised Directive with the Maryland Department of the Environment (MDE). The agreement represents a clear path forward that will ensure long-term compliance and strong partnership with the Maryland Environmental Service (MES) to increase capacity and expedite key projects. The Order will end after 3 months of effluent levels within permitted levels. The City anticipates a Consent Decree with MDE that will define future involvement.

We are pleased to report that, at BRWWTP, total suspended solids (TSS), total nitrogen (TN), total phosphorus (TP) and biochemical oxygen demand (BOD) are all now below the permitted level and continuing to trend downward. Additionally, June's preliminary report shows that suspended solids have decreased by 57%; biochemical oxygen demand has decreased by 86%; total phosphorus has decreased by 90%; and total ammonia nitrogen has decreased by 74% since March 2022. BRWWTP continues to make progress.

Monthly				Permit Limit	Meeting Requirements
Concentration	Mar-22	Jun-22	Difference		
Total Suspended Solids (TSS)	14 mg/L	6 mg/L	57%	10 mg/L	Yes
Biochemical Oxygen Demand (BOD)	14 mg/L	2 mg/L	86%	10 mg/L	Yes
Total Phosphorus (TP)	1.45 mg/L	0.15 mg/L	90%	0.2 mg/L	Yes
Total Ammonia Nitrogen	2.3 mg/L	0.6 mg/L	74%	5.1 mg/L (March) / 2.0 mg/L (June)	Yes
E.coli	43 MPN*/100mL	7 MPN/100mL	84%	126 MPN/100mL	Yes

*MPN = Most Probable Number

As seen in the table above, as the solids are removed from the system, the nutrients levels reduce as well.

Per the Maryland Department of Environment: The results of recent effluent monitoring by the Maryland Department of the Environment (MDE) show significant improvements in the quality of the final effluent.

Governance

The Department is working diligently to hire, retain and train our employees. In June, DPW created a new division of Environmental Regulation Compliance (ERC) and hired its first compliance officer to ensure all assets meet and maintain compliance standards. We anticipate ERC being fully staffed by the end of November.

The Bureau is in the process of implementing apprenticeship and training programs in mechanical maintenance, instrumentation maintenance, electrical maintenance, and apprenticeship programs for wastewater operations. Management is continuously looking at how to best improve operations including utilizing the support of contractors and other partners to support a comprehensive training program.

Maintenance

The treatment system has 26 functioning sand filters; 22 are not functioning due to various equipment failures, insufficient sand, and mechanical issues. There are 10 pumps for the sand filters on order.

The Wastewater Division has been collaborating with the Veterans Administration, Baltimore City Public Schools, Project JumpStart, and various charter schools to compile a list of candidates with experience in disciplines that would enhance the Maintenance team. Interviews are scheduled for the first week of July. Once selections are made there will be an accelerated onboarding process to provide the needed support for the current team. We are confident that we will onboard 20 new hires through this partnership by the end of the month. The new hires will be used in almost all crafts (mechanical, electrical, carpenters, as well as laborers). The plan will be to assess skill sets for potential permanent hires. Under the guidance of an experienced supervisor, this team will assist in clearing the backlog of minor repairs such as:

- Pump repairs
- Valve and gate repairs
- Motor repair
- Electrical troubleshooting and repairs
- Lighting replacement
- Building repairs
- Grounds maintenance

Capital Improvement

Currently the plant has two Primary Settling Tanks (PSTs) in service with two more on schedule to be in service by the end of August 2022. The PST's are the first treatment process utilized to separate the water and solids from the process stream. The process allows heavy solids to settle into the bottom of the tank and floatable solids remain on the surface for removal from the process stream. This allows for the water to be conveyed along to the next treatment process for continued solids and nutrient removal. The removal of solids from the process stream allows for better biological development in the treatment process

The plant has 3 Activated Plants with #4 being the most recent, starting in May 2022. Activated #4 is currently receiving approximately 60% of the daily plant flow so that repairs and maintenance to Activated plants #2 and #3 can take place. The startup of Activated #4 has improved the nutrient removal and the amount of solids in the biological reactors. The Activated sludge process is designed to promote the Biological Nutrient Removal (BNR) process through the use of anoxic (phosphorus removal), aerobic(nitrification), and anaerobic(denitrification) zones to achieve phosphorus and nitrogen removal from the process water.